

From: Director-DWP, Program (DEP)

Sent: Friday, July 24, 2015 1:36 PM

Subject: Inspection of Hydropneumatic Storage Tanks and Asset Management Plans



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

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Governor

Karyn E. Polito
Lieutenant Governor

Matthew A. Beaton
Secretary

Martin Suuberg
Commissioner

IMPORTANT NOTICE

TO: Public Water Suppliers

FROM: Yvette DePeiza, Program Director, Drinking Water Program, BWR /MassDEP

DATE: July 24, 2015

RE: Inspection of Hydropneumatic Storage Tanks and Asset Management Plans

The Massachusetts Department of Environmental Protection, Drinking Water Program (MassDEP/DWP) has been notified that a conventional hydropneumatic (pressurized) storage tank failed at a community public water system in North Stonington, Connecticut on June 23, 2015. The failure caused a large explosion and the pump station was totally destroyed. Thankfully, the explosion occurred around 3:00 am and no injuries or loss of life occurred. The distribution system depressurized and significant emergency measures were required to restore and sustain water service. A preliminary analysis indicated that several factors contributed to the tank's catastrophic failure including internal corrosion, age, and construction.

Further research indicated that hydropneumatic water and wastewater tanks have failed similarly in California
http://www.acwajpia.com/filecabinet/rmnopw/hydropneumatic_tank_insp_9-28-12-jh.pdf and regrettably a loss of life occurred in one event.

A review of our records indicated that there are 970 hydropneumatic tanks operating in water systems in Massachusetts. **To avoid catastrophic failure similar to what occurred in Connecticut and other places, MassDEP strongly recommends that all operational hydropneumatic tanks be evaluated and maintained in accordance with manufacturer's specifications.** The evaluation should consider structural integrity, manufacturer's pressure ratings, age and expected service life, and condition of internal coating systems. The typical

useful life of tanks varies; however, for asset management purposes, hydropneumatic tanks generally have a life expectancy of 10 years. Public water systems should verify that pressure relief valves and high pressure alarms are installed and operational. Current operational pressure settings of hydropneumatic tanks should be reviewed to determine if the current operating pressures comply with the manufacturer's recommended range. If a tank is found to be structurally deficient and requires immediate replacement, the system pressure may need to be reduced temporarily to prevent a catastrophic failure of the tank.

MassDEP is working on updating its guidance for hydropneumatic tanks to include recommendations regarding inspections. See current guidance in Section 8.3 of Massachusetts Drinking Water Guidelines located at <http://www.mass.gov/eea/docs/dep/water/laws/a-thru-h/glchpt8.pdf>. The guidance refers to the latest American Society of Mechanical Engineer's (ASME) code requirements or an equivalent requirement of state and local laws and regulations for the construction and installation of unfired pressure vessels. Until that guidance is updated to address inspections, the following is a link to an informative tank inspection and maintenance document from the Association of California Water Agencies Joint Powers Insurance Authority: http://www.acwaipia.com/filecabinet/rmnopw/Hydropneumatic_Tank_Insp_9-28-12-JH.pdf

The catastrophic failure of public water supply infrastructure provides an excellent reminder of the importance of an asset management plan. The plan assesses the age and the condition of water system components to set aside reserve funds to replace aging components before catastrophic failure and the resulting loss of water supply occurs. MassDEP provides capital improvement and asset management planning resources on the MassDEP website at <http://www.mass.gov/eea/agencies/massdep/water/drinking/water-systems-ops.html#3>. You may also contact our Capacity/Asset Management contact below for information on appropriate funding options for replacement of aging infrastructure.

Please use the following contact information to contact the Drinking Water Program for further information on this issue.

Western Regional Office	Deirdre Doherty	413-755-2148
Central Regional Office	Robert Bostwick	508-849-4036
Northeast Regional Office	Thomas Mahin	978-694-3226
Southeast Regional Office	Richard Rondeau	508-946-2816
Capacity /Asset Management	Michael Maynard	508-767-2735
Drinking Water Program	Program.director-dwp@state.ma.us	

Y/DWPArchive/ Hydropneumatic tanks7-24-2015

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